

**Working with children that have  
different needs and abilities  
In  
Mathematics**

Draft

## Mathematics – children with different needs and abilities

Mathematics can be thought of as a language system with numeric symbols instead of words. Reading and arithmetic are similar: numbers and words stand for concepts. Many children with different abilities, who have difficulty with language, may have difficulty learning to perform a math process.

For a child with different needs and abilities, mathematics is everywhere. It is a natural part of their world. They see numbers everywhere—on their house, on play telephones, on the clock, on toys, and in books. Many rhymes, songs, and games develop language and mathematical concepts—“Ten Little Monkeys,” “Three Little Pigs,” “One, Two, Buckle My Shoe.” Many books contain math relationships among different components and the lives of children, i.e., “I’m the Big Sister Now.”

In a typical curriculum activity, children with different abilities may not understand that a counting sequence indicates increasing quantities or identify objects to ten (10). Curriculum materials and activities need to be assessed to ensure successful inclusion of children with different needs. One of the foremost questions for teachers to ask themselves when structuring an activity to help children understand mathematical concepts is, “Does it fit into the functioning level of the child’s learning and experience?”

An inclusive mathematical curriculum reflects awareness of and sensitivity to all areas of a child’s life: ability, cultural, social, language, faith, and motor. Children with different needs need caregivers who are interested in who they are, understand how each child is different, what makes them different, and how a particular child learns best—his learning style.

Children with different abilities use different learning styles—visual, auditory, and tactile. Examples: “Look, I see two horses.” “Listen, the horses say, ‘neigh-h-h-h-h’.” “Hold me up so I can touch the horses.” Teachers integrate math in all aspects of the daily routine through individual, pair, and small group activities. Children are demonstrating an emergent concept of “set” when in the house area they “set” the table. They understand, “It’s time to...” when they do not understand time.

Children with different abilities learn math concepts best when they are relevant and meaningful—familiar. Children can use pictures and compare the number of birds to the actual number in the cage. They use language (verbal or non-verbal) to describe size, the color, and the number of birds. The focus of this activity is mathematics and an understanding of terminology used in mathematics. Most children with different abilities benefit from working with basic counting, matching, and measuring activities with real objects.

Once children learn the basic signs of the four (4) arithmetic operations, a simple calculator can be useful. Children may also need to have word problems read to them. Many computer programs are available to teach basic math skills and many programs use a game-like format that teachers have found helpful.

Children with different needs need practice in logical reasoning, i.e., the more they press (bang on) the clay, the thinner it gets. They need a broad exploration without being judged. Use real materials and situations, “I’ll give you two cookies.” They can see them, touch them, count them, taste them, break them in half, count again, and eat them. **DOING** math is the key, not just hearing about it. When teaching math:

- Use concrete objects – cookie, block, water
- Play games – count objects, name numbers when shown number, match numbers, group objects, and select numbers
- Use reasoning skills – *“What else can you use to build a tower?”*
- Play size comparison – *“Give me the big cup.”*
- Help – identify, predict, construct
- Emphasize – mathematical concepts
- Give – large paper and pencil

Children with different abilities need to organize their world. They need help to classify, recognize relationships, and compare/contrast. They need the teacher’s knowledge and skill in learning how to develop compensatory skills that will help them as math becomes more formalized.